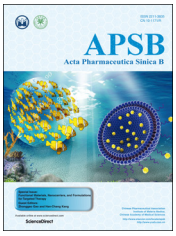
Acta Pharmaceutica Sinica B 2016;6(4):260

Chinese Pharmaceutical Association
Institute of Materia Medica, Chinese Academy of Medical Sciences

Acta Pharmaceutica Sinica B

www.elsevier.com/locate/apsb
www.sciencedirect.com



Editorial

Interest in functional materials, nanocarriers, and formulations for targeted therapy, which can selectively deliver therapeutic or diagnostic payloads to target sites such as organs, tissues, cells, and subcellular organelles, is continuously growing because such a targeted strategy may facilitate greater accumulation of the delivered payloads at sites of interest and less accumulation at non-target sites, which can then result in maximized therapeutic efficacy and minimized undesirable effects. In addition, controlling drug releasing rates from nanocarriers and formulations could be included in targeted therapy: fast release, sustained/prolonged release, timed release, controlled release, and site-specific release. For delivering and/or releasing drugs at target sites, targeted systems mostly have used various specificities such as anatomy, physiology, pathology, molecular interactions (*e.g.*, antigen-antibody and receptor-ligand interactions) and internal and external triggers (*e.g.*, pH, glutathione, ROS, light, *etc.*). Such novel targeting pharmaceutical formulations were prepared based on the new multi-functional materials, which not only can be used to increase the solubility of poorly soluble drugs, but also prepare versatile multi-functional dosage forms for targeting delivery. The development of functional materials provides the opportunity for the preparation of targeted drug delivery formulation.

Unfortunately, this special issue could not introduce all aspects of broadness in targeted delivery, release, and therapy. Nevertheless, general organ/cell targeting strategies such as brain and lung are reviewed by Huile Gao and Chuanbin Wu/Xin Pan, respectively, and specific brain and lung targeting systems are introduced by Yongzhuo Huang/Victor C. Yang and Hulin Jiang, respectively. Using various stimuli in charge-reversal systems is reviewed by Chen Jiang. Light and pH-triggered carriers are introduced by Min Suk Shim and Jiwen Zhang/Dawei Chen, respectively. Strategies for effective cellular internalization are reported by Venkatareddy Nadithe and Chong Li. Especially, an example for the sustained release is reported by Rui Ding/Yao Fu. Scientists from the United States, Republic of Korea and China contributed elaborated reviews and valuable research works on functional material synthesis and novel nanocarriers for targeting drug and gene delivery. We hope this issue provides our readers a general and specific background on targeted delivery, release, and therapy.

http://dx.doi.org/10.1016/j.apsb.2016.06.006